

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Amended) A method of communicating between a media access control layer (MAC) and a physical layer (PHY), comprising:

sending a first 100 MHz time-division multiplexed signal on a receive data line ;

sending a plurality of time-division multiplexed receive control signals on a receive control line;

sending a second 100 MHz time-division multiplexed signal on a transmit data line;

sending a plurality of time-division multiplexed transmit control signals on a transmit control line,

wherein the receive control signals include a receive data valid signal and a receive error signal and the transmit control signals include a transmit enable signal and a transmit error signal.

2. (Previously Amended) The method of claim 1 wherein the time-division multiplexed receive control signals includes 4 bit segments and wherein each 4 bit segment includes a synchronization bit.

3. (Previously Amended) The method of claim 2 wherein the receive data line includes 4 bit segments and wherein the beginning of a 4 bit segment of the receive data line is determined by the synchronization bit.

4. (Previously Amended) The method of claim 1 wherein the time-division multiplexed receive control signals includes 4 bit segments of the receive data line and wherein each 4 bit segment includes a receive data valid bit.

5. (Previously Amended) The method of claim 1 wherein the time-division multiplexed receive control signals includes 4 bit segments and wherein each 4 bit segment includes a receive error bit.

6. (Previously Amended) The method of claim 1 wherein the time-division multiplexed receive control signals includes 4 bit segments and wherein each 4 bit segment includes a carrier sense bit.

7. (Previously Amended) The method of claim 1 wherein the time-division multiplexed transmit control signals includes 4 bit segments of the transmit data line and wherein each 4 bit segment includes a synchronization bit.

8. (Previously Amended) The method of claim 7 wherein the transmit data line includes 4 bit segments and wherein the beginning of a 4 bit segment of the transmit data line is determined by the synchronization bit.

9. (Previously Amended) The method of claim 1 wherein the time-division multiplexed transmit control signals includes 4 bit segments and wherein each 4 bit segment includes a transmit enable bit.

10. (Previously Amended) The method of claim 1 wherein the time-division multiplexed transmit control signals includes 4 bit segments and wherein each 4 bit segment includes a transmit error bit.

11. (Original) The method of claim 1 further including indicating the speed of the PHY using the receive data line.

12. (Original) The method of claim 11 wherein indicating the speed of the PHY using the receive data line includes including an interface speed bit in a data segment when a receive control segment indicates no carrier sense, no receive data valid and no receive error.

13. (Original) The method of claim 1 further including buffering data transmitted from the PHY to the MAC using an elasticity buffer that is at least 27 bits long.

14. (Original) The method of claim 1 further including buffering data transmitted from the PHY to the MAC using an elasticity buffer that long enough to buffer an entire frame of data from a data source having a clock with a frequency tolerance of 0.1%.

15. (Previously Amended) An interface between a first media access control layer and a second media access control layer, consisting essentially of:

a time-division multiplexed receive data line;

a time-division multiplexed receive control line for transmitting different functional types of receive control signals including a receive data valid signal and a receive error signal;

a time-division multiplexed transmit data line;

a time-division multiplexed transmit control line for transmitting different functional types of transmit control signals including a transmit enable signal and a transmit error signal.

16. (Currently Amended) A media access control layer to physical layer interface consisting essentially of:

a common clock;

a time-division multiplexed receive data line;

a time-division multiplexed receive control line for transmitting different functional types of receive control signals including a receive data valid signal and a receive error signal;

a time-division multiplexed transmit data line;

a time-division multiplexed transmit control line for transmitting different functional types of transmit control signals including a enable ~~receive data valid~~ signal and a transmit ~~receive error~~ signal.

17. (Previously Amended) The interface of claim 16, wherein said time-division multiplexed receive control line contains receive control signals further comprising [a receive data valid signal, a receive error signal and] a carrier sense signal.

18. (Canceled)

19. (Previously New) The method of claim 1, wherein the receive control signals further include a synchronization (SYNC) signal and a carrier sense signal.

20. (Previously New) The method of claim 1, wherein the transmit control signals further include a synchronization (SYNC) signal.